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ABSTRACTS OF ARTICLES FROM UNAVAILABLE  
SOVIET SCIENTIFIC AND TECHNICAL PERIODICALS (8)

[Comment: This report presents abstracts taken from issues of the Soviet periodical Referativnyy Zhurnal published October-November 1954. These abstracts are of articles originally published in Soviet scientific and technical serial publications which are not known to be available outside the Soviet Orbit.

The following form is used for each abstract in this report:

General subject, specific subject (Soviet abstract number)  
Name of unavailable periodical, volume and/or issue number,  
 date, pages  
 Author of article  
 Title of article (Language, if other than Russian)  
 Abridgment of abstract (Source)

The sources, indicated in parentheses at the end of each abstract, are abbreviated as follows:

RZhAstr	Moscow, Referativnyy Zhurnal	-- Astronomiya i Geodeziya
RZhBiol	Moscow, Referativnyy Zhurnal	-- Biologiya
RZhGeol	Moscow, Referativnyy Zhurnal	-- Geologiya i Geografiya
RZhFiz	Moscow, Referativnyy Zhurnal	-- Fizika
RZhKhim	Moscow, Referativnyy Zhurnal	-- Khimiya
RZhMat	Moscow, Referativnyy Zhurnal	-- Matematika
RZhMekh	Moscow, Referativnyy Zhurnal	-- Mekhanika

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## I. ASTRONOMY AND GEODESY

Aerial Survey and Photogrammetry (5870)  
Sbornik Statey po Geodezii, No 6, 1954, pp 39-44  
 Gerasimova, A. V., Gordon, G. G., and Kononilova, A. V.  
 Operation of the Drobyshev Precision Stereometer SM-3bis

Working conditions including physiological effects on the stereometer SM-3bis were analyzed by the Central Scientific Research Institute 10 of Aerial Survey and Cartography together with the Institute of Work Hygiene and Occupational Diseases. All observers established a basis at variance with the physiological, because of imperfect eyepiece basis. Both eyepieces should be provided with a dioptric scale. (RZhAstr, No 11, 1954)

Aerial Survey and Photogrammetry, Application of (5975)  
Sbornik Statey po Geodezii, No 6, 1954, pp 53-57  
 Moiseyev, V. S.  
 Determination of Mean Altitudes and Diameters of Standing Timber From Aerial Survey

A method established by Prof. N. V. Tret'yakovskiy stating that the height of uncut standing timber is around 5/6 of its maximum height and tables computed by him are applied for determining dimensions of pine, fir, birch and aspen. (RZhAstr, No 11, 1954)

Astrophysics, Astrophotometry (5608)  
Izv. Gl. Astron. Obser., 19, 4, No 151, 1953, pp 97-129  
 Mikhelson, N. N.  
 Effect of Dislocation of the Negative on the Accuracy of Photometric Measurements

The effect of shifting of the negative along the optical axis on accuracy of measurements by automatic microphotometers is investigated. Computed are the magnitude of the light flux falling on the photocell if accurately focused; the same magnitude when passing through various points of the negative if the latter is shifted; and finally the magnitude of light flux falling on the photocell if the negative is shifted. Examples for three particular cases are presented. (RZhAstr, No 11, 1954)

Astrophysics, Astrospectroscopy (5611)  
Izv. Gl. Astron. Observ., 19, 5, No 152, 1954, pp 87-99  
 Panaiotov, L. A.  
 Determination of Radial Velocities of Stars by an Objective Prism with Straight View

Errors involved in three basic methods of massive determination of stellar radial velocities by means of an objective prism are analyzed. Discussed are the absorption method, the method of length of the spectrum, and the method of turning the prism. The errors are ascribed to extra-axial effects of the prisms and may be reduced by the use of a prism with straight view. Results are presented in two tables and further improvement of the method is envisaged. (RZhAstr, No 11, 1954)

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Astrophysics, Astrospectroscopy (5612)  
Izv. Gl. Astron. Observ., 19, 5, No 152, 1954, pp 100-102  
 Mitrofanova, L. A.  
 Determination of Relative Numbers of Chrome

The product of oscillator force  $f$  and static weight  $g$  was determined by the radiative method, as previously done by authors (ibid. No 149, 81 (1953)). An a.c. arc with electrodes of electrolytic chrome was used as excitation source. Results concurring with those obtained by absorption method by A. Hill and R. King (J. Optical Soc. America 41, 319 (1951)) are tabulated. (RZhAstr, No 11, 1954)

Astrophysics, Eclipsing Variables (5626)  
Izv. Astron. Observ. Odessk. Univ., 3, 1953, pp 287-291  
 Koval, G. T.  
 Eclipsing Variable TT Lyrae

The variable TT Lyr was studied from plates of Odessa sky service. Light curves were plotted using photographic and visual observations. Estimates were made by the Blazhko-Neyland method. The secondary minimum corresponds to phase 0.464. Mean color index was found 0.41. A map of reference stars is given. (RZhAstr, No 11, 1954)

Astrophysics, Observations of Nebulae (5642)  
Izv. Krymsk. Astrofiz. Observ., 11, 1954, pp 8-17  
 Pikelner, S. B.  
 Spectrophotometric Study of Diffuse Nebula NGC 7000

The study was carried out by means of the nebular spectrograph of Maksutov-Ioannisiani design. Relative intensities of H and N lines were corrected for interstellar absorption according to the reddening of the star HD 199579 of class O7 which, as it was pointed out by G. A. Shayn and V. F. Gaze (ibid. 6, 3, (1951)), excites the luminosity of the nebula. Author comes to the same conclusion. He also finds dusty absorbing matter between the Pelican nebula and the star HD 199081 of class B3. (RZhAstr, No 11, 1954)

Astrophysics, Observations of Nebulae (5643)  
Izv. Krymsk. Astrofiz. Observ., 11, 1954, pp 18-21  
 Shayn, N. P. and Gaze, V. F.  
 Abundance of Diffuse Matter in the Outside Region of Planetary Nebulae

Authors contradict the hypothesis by T. Page and J. Greenstein (Astrophys. J. 114, 98 (1951)) stating that the observed dimensions of planetary nebulae are below their real size, because of absorption of ionized radiation by the outside shell. Authors consider this outside barrier hardly possible, because of the heterogeneous structure of the nebula. Their observations revealed a new filament in nebula NGC 7293 at 14 inches from the center. It is a thin filament of ionized matter with a nebulosity of intermediate type having the shape of a thin ellipse. (RZhAstr, No 11, 1954)

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Astrophysics, Observations of Nebulae (5644)  
Izv. Krymsk. Astrofiz. Observ., 11, 1954, pp 42-43  
 Gaze, V. F.  
 Photographs of Five Nebulae of Peculiar Structure

Photographs through a red filter revealed filament structure of nebula S22. The radiation of McD30 seems to originate from a collision of gaseous matter with a dark interstellar cloud. The nebula southeast of epsilon Cephei contains stars of the B0 or F1 type. The nebula NGC 7380 consists of two clouds containing several bright filaments. S104 has a bright nucleus on weak circular background and a bright filament. (RZhAstr, No 11, 1954)

Astrophysics, Observations of Nebulae (5648)  
Izv. Krymsk. Astrofiz. Observ., 11, 1954, pp 3-7  
 Shayn, G. A.  
 Diffuse Emissive Nebulae in M33

The distribution of diffuse nebulae in M33 was studied. Some difficulties were met in evaluation of brightness of weak objects. A total of 230 very bright objects were classified as diffuse nebulae, hot star clusters, white supergiants, all not below -5 absolute magnitude. Emissive nebulae were found along the spiral arms. (RZhAstr, No 11, 1954)

Astrophysics, Observations of Stars (5619)  
Izv. AN Arm SSR, Ser. Fiz.-Matem., Yestestv. i Tekhn. n., 6, No 5-6  
 1953, pp 87-98  
 Ivanova, N. L.  
 Spectrophotometric Study of Bright B-Stars in the Pleiades and in Orion

A total of 24 spectrograms of 12 stars in the region of lambda 5600-3000 were obtained by means of the ASI-5 telescope. Spectrophotometric temperatures were determined for the spectral regions on both sides of Balmer limits, as well as the jump magnitude D near this limit. Alpha Lyrae was taken as standard star. The D values are in good agreement with those by Chalonge and Barbier. (RZhAstr, No 11, 1954)

Astrophysics, Observations of Variables (5630)  
Izv. Astronom. Observ. Odessk. Univ. 3, 1953, pp 293-312  
 Tsesevich, V. P.  
 DF Cygni

The star DF Cygni is a variable of the type RV Tauris. Analysis of visual and photographic observations revealed a slow variation of light having a 780<sup>d</sup>.2 period and a weak color oscillation having the same period. (RZhAstr, No 11, 1954)

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Astrophysics, Spectroscopic Variables (5625)  
Peremennyye Zvezdy, 9, No 6, 1953, pp 379-390  
 Bolokadze, R. D.

Study of Continuous Spectrum of Eclipsing Variable VV Orionis

Spectrograms of VV Ori were obtained by Dombrovskiy in Abastuman (September-October 1938) with a Zeiss camera and an objective prism. The results of measurements were corrected for absorption of light by the terrestrial atmosphere. Elements of the circular eclipse were calculated using photoelectric observations of H. Schneller (El. Veroeff., Berlin-Babelsberg, No 17 (1936)). The effective temperature of the satellite was found to be 12,100° and of the main star 22,000°. (RZhAstr, No 11, 1954)

Astrophysics, Spectral Observations of Stars (5622)  
Izv. Krymsk. Astrofiz. Observ., 11, 1954, pp 59-73  
 Mustel, E. R., Galkin, L. S., Kopylov, I. M.  
 Spectrophotometry of Gamma Cassiopeiae

A total of 12 spectrograms of gamma-Cas. obtained by means of the 1,200 mm reflectors of Crimea Observatory and the spectrograph constructed by V. A. Albitskiy are analyzed. Iron-arc spectrum was used for comparison. Microphotograms were obtained by self-recording Moll's microphotometer. Data are tabulated and compared with quantum number n of Balmer series. (RZhAstr, No 11, 1954)

Geodesy, Historic (5827)  
Geogr. Sb., No 3, 1954, pp 117-130  
 Melnikova, T. N.  
 Mathematical Basis of Russian Maps of the 18th Century

Some separate question pertaining to astronomic-geodetic determinations of points in the 18th Century are studied from published archive materials. Instruments and method applied to cartography of Russia in the 18th Century are described. (RZhAstr, No 11, 1954)

Geodesy and Topography, Theories and Methods of (5857)  
Sbornik Statey po Geodezii, No 5, 1953, pp 53-61  
 Brodetakly, Ye. S.  
 Reducing Costs of Topographic Geodesic Works in Each Individual Operation

[No abstract given.] (RZhAstr, No 11, 1954)

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Geodesy and Topography, Theories and Methods of (5859)  
Sbornik Statey po Geodezii, No 6, 1954, pp 33-38

Alter, S. P.

Field Editing of Topographic Maps of Medium and Large Scale

Editing methods for maps of medium and large scale meet difficulties in using a topographic scale of 1:100,000. Therefore the author suggests a topographic survey at a scale 1:10,000 and 1:25,000 for field editing of maps. The sequence of processing is outlined. (RZhAstr, No 11, 1954)

Geodesy and Topography, Theories and Methods of (5860)  
Sbornik Statey po Geodezii, No 6, 1954, pp 45-47

Uspenskiy, A. N.

Problem of Color Selection for the Drawing of Field and Constituent Map Originals

An inadequate choice of colors for the drawing of original maps leads to unsatisfactory quality of editorial blueprints. Author recommends colors with low reflection index in the short wave spectrum. (RZhAstr, No 11, 1954)

Geodesy and Topography, Theories and Methods of (5861)  
Sbornik Statey po Kartografii, No 5, 1953, pp 41-42

Oshevneva, N. V.

Experience in Conformal Mapping of Cartographic Data

Describes the use of conformal mapping method (suggested by A. V. Borodin at the Central Scientific Research Institute of Geodesy, Aerial Survey and Cartography) at the Omsk cartographic plant in the production of a USSR map at a 1:5,000,000 scale using a cylindrical perspective projection as suggested at the above institute. This method reduced the time of processing and improved the quality of maps. (RZhAstr, No 11, 1954)

Higher Geodesy, Precision Polygonometry (5889)  
Izv. AN Belorusskoy SSR, No 4, 1953, pp 145-160

Petrenko, A. I.

Perspective Conical Coordinates and Projections

General formulas of perspective conic coordinates and projections are derived. It is shown that perspective cylindrical and perspective coordinates are particular cases of the general formulas. For cartographic network, formulas for rectangular coordinates of conic projections are established. (RZhAstr, No 11, 1954)

Stellar Astronomy, Binaries (5873)

Izv. Astron. Observ. Odessk. Univ., 3, 1954, pp 249-255

Shulberg, A.

Problem of Orbit Elements Determination of Stars of the Algol Type

A more accurate method for determining of orbit elements of eclipsing binaries with extended atmospheres (see RZhAstr-2183) (1954) is given, taking into consideration transparency of the extended atmosphere. This method is applied to the study of V 444 Cygni System. (RZhAstr, No 11, 1954)

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Sun, Spots (5709)  
Izv. Astronom. Observ. Odessk. Univ., 3, 1953, pp 323-335  
 Kalender'yan, A. O. and Shodo, Ye. L.  
 Observations of Sun Spots on the Astrograph OAO.

Positions of sun spots were measured on pictures obtained from May 1937 to April 1938 by the Cooch astrograph with a magnifying camera. (RZhAstr, No 11, 1954)

Theoretical Astronomy, Astrometry (5586)  
Izv Astron. Observ. Odesskogo Univ., No 3, 1953, pp 123-162  
 Cherniyev, L. F.  
 Catalog of Declinations of 125 Circumpolar Stars at the Time of 1950.0 Equinox

A catalog of declinations from observations by the author on the meridian circle of the Odessa observatory in 1950-1951 of stars observed in Pulkovo at the end of the century by M. Dichenko and in the twenties by I. Dyukov in Odessa. A detained description of the instrument and of methods applied is given. (RZhAstr, No 11, 1954)

Theoretical Astronomy, Astrometry (5585)  
Izv. Astronom. Observ. Odesskogo Univ., No 3, 1953, pp 61-121  
 Konin, V. V.  
 Catalog of Declinations of 319 Stars for the Equinox 1950.0 From Observations on the Odessa Meridian Circle During the Years 1947-1950.

A total of 319 stars included in Pulkovo zenith-telescope program were observed, on the meridian circle of Odessa observatory in 1924-1929 by N. V. Zimmerman and in 1947-1950 by the author. The instrument and the observation methods are described. (RZhAstr, No 11, 1954)

## II. CHEMISTRY

Biochemistry (27264)  
Dokl. AN Arm SSR, Vol 16, No 4, 1953, 109-115  
 Chaylakhyan, M. Kh.  
 The Connection Between Photoperiodism and Basic Physiological Processes in the Plant

Attempts to connect photoperiodism with photosynthesis and respiration in plants. (RZhKhim, No 10, 1954)

Biochemistry (27398)  
Zdravookhr. Sov. Latvii, No 10, 1953, 51-61  
 Shirochenkova, T. N.  
 The Quantitative Protein Content in the Serum of Blood Donors

Determined the protein content in the serum of 500 blood donors. Failed to establish any relationships between protein content and hemoglobin or erythrocytes. (RZhKhim, No 10, 1954)

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Inorganic Chemistry (26808)

Vestn. AN BSSR, No 1, 1953, pp 61-70

Byal'mevich, Yerofeyev

Mechanism of the Thermal Decomposition of Some Solid Substances

Investigated the thermal decomposition of some chromate and carbonate salts. (RZhKhim, No 10, 1954)

Organic Chemistry (27105)

Dokl. AN UzSSR, No 6, 1953, pp 44-47

Yunusov, S. Yu., Abduazimov, Kh. A.

Investigating Alkaloids from the Ungernia Severtzovii Plant

Extracted the new alkaloid ungerine from the above plant. Describes some of the chemical and physical properties of the alkaloid. (RZhKhim, No 10, 1954)

Organic Chemistry (27097)

Dokl. AN UzSSR, No 5, 1953, pp 38-41

Udovenko, V. V., Azizov, M. A., Ayzikov, E. I.

The Reactions of Anabasine With Mercurous and Mercuric Chlorides

Describes some of the reactions of anabasine with mercurous and mercuric chlorides. (RZhKhim, No 10, 1954)

Physical Chemistry (26790)

Izv. Sektora Fiz.-Khim. Analiza (In-t obshch. i neorgan. khimii AN SSSR), Vol 23, 1953, pp 233-240

Blidin, V. P.

Mutual System Consisting of the Chlorides and Nitrates of Rubidium and Cesium

Studied the above system and determined its characteristics. (RZhKhim, No 10, 1954)

## III. GEOLOGY AND GEOGRAPHY

Geology

Engineering Geology (3015)

Sb. tr. Vses. n.-i. in-ta gidrotekhn. i san.-tekhn. rabot, No 4, 51-79, 1953

Savinov, O. A.

Principles Governing the Procedure for Experimentally Determining the Characteristics of Elasticity of Ground which Enter into the Dynamic Computations of Foundations

[No abstract given.] (RZhGeol, No 3, 1954)

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Engineering Geology (3015)Materialy po Labor. Issledovan'iam Merzlykh Gruntov, 1, 118-134, 1953Shusharina, Ye. P.Procedure for Determining the Coefficients of Thawing and Packing (Settling) of Frozen Grounds.

The author describes experiments on the thawing of specimens of frozen grounds of broken structure: quartz sand, surface clay, and banded clay, all under various pressures. He determines the settling during thawing and the subsequent packing under given load up to destruction, and computes the variations in the coefficient of porosity. The data of the experiments confirm the position held by N. A. Tsytovich that there is a linear relation between this variation and the magnitude of the pressure on the ground. (RZhGeol, No 3, 1954)

Engineering Geology (3026)Gidrotekhn. str-vo, No 11, 25-29, 1953Fedorov, I. S., and Kushnarev, D. M.Packing (Settling) and Breakdown of Bound Grounds under the Influence of Explosions

The authors expound the results of an investigation into the influence exerted by an explosion upon the structural properties of ground. During an explosion the ejection of the elastic gases of the explosive causes the packing of the ground located under the explosive and the drawing of the ground toward the side of the zone of the broken structure of the ground. In the experiments a bore pit in clayey ground was used, 1.2 x 1.2 meters in cross section and 2.1 meters deep. (RZhGeol, No 3, 1954)

Engineering Geology (3030)Sb. tr. Vses. n.-i. in-ta gidrotekhn. i San.-tekhn. rabot, No 4, 5-27, 1953Lobasov, P. D.Experience in the Use of Dense Structural Clays for Erection of Earthen Structures

The author suggests the possibility of using dense structural clays for building earthen structures by pouring clods and various blocks of clays into construction forms to be used as building blocks. (RZhGeol, No 3, 1954)

Experimental Mineralogy and Petrography (2810)Zap Leningr. gorn. in-ta, 1953, 29, No 2, 185-196Skropyshev, A. V.Experimental Investigations of Certain Engineering Properties of Optical Ice-land Spar

In the crystals and cleavage planes (cuttings) of natural calcite the variations caused by gradual and sharp fluctuations in temperature, by the action of sunlight and ultraviolet light, by the influence of explosive waves and shock are graphically visualized and evaluated. (RZhGeol, No 3, 1954)

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General Geological Service (2542)  
Izv. AN Turkm SSR, 1953, No 5, 97  
Znamenskiy, A. I.  
 In the Institute of Geology

The author reports on the laboratories and field investigations of the Institute of Geology, Academy of Sciences of the Turkmenian SSR, in the field of aerodynamics of wind-sand current in order to solve the problem of fighting against drifting sands. (RZhGeol, No 3, 1954)

General Geological Service (2547)  
Shinzhlekh Ukhuan, 1953, No 1, 3-5 (Mongolian)  
 Anonymous  
 Scientific Investigative Operations Carried Out by the Committee of Sciences in 1952 and the Problems for 1953

[No abstract.] (RZhGeol, No 3, 1954)

General, History (2513)  
Uch. Zap. Saratovskogo Gos. Un-ta, 1953, 37, 157-162  
Morozov, N. S.  
 I. V. Mushketov

Fiftieth anniversary of the death of the outstanding Russian geologist and traveler I. V. Mushketov (1850-1902). (RZhGeol, No 3, 1954)

General, History (2515)  
Metsniyereba da Tekhnika, 1953, No 4, 35-38 (Georgian)  
Dzhanelidze  
 Avicenna on Geological Phenomena

The author expounds in popular form certain statements made by the Tadzhik scientist Avicenna on geological processes, who lived from the 10th to the beginning of the 11th Century. (RZhGeol, No 3, 1954)

General, Personalia (2519)  
Nauka i zhittya, 1953, No 10, 33 (Ukrainian)  
 Anonymous  
 Outstanding Scientist

Popular essay on Academician V. A. Obruchev See also RZhGeog, 1954, 13. (RZhGeol, No 3, 1954)

General, Personalia (2527)  
Geologicheni Zh., 1953, 13, No 4, 91-92 (Ukrainian)  
Tsapenko, I. I.  
 Aleksey Yakovlevich Bilyavskiy

Recollections of one of the senior scientific associates of the Academy of Sciences of the Ukrainian SSR, candidate of geologicomineralogical sciences, A. Ya. Bilyavskiy (1899-1953). (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-LGeochemistry (2833)Tr. Mineralogich. muzeya AN SSSR, 1953, No 5, 19-29Ginsburg, I. I.Information on Hypergene Processes in the Works of A. Ye. Fersman

The author briefly expounds the basic ideas of A. Ye. Fersman in the field of hypergenesis and their development in the works of Soviet scientists. He notes the most important successes in the study of the geochemistry of hypergene processes; e.g., the discovery of the formation of minerals as a result of soil forming process (work of B. B. Polynov and his school), the work of A. P. Vinogradov in biogeochemistry, work on weathering crust and oxidation zones (S. S. Smirnov, F. V. Chukhrov, I. I. Ginzburg). (RZhGeol, No 3, 1954)

Geology of Quaternary Deposits (2634)Visn. AN URSSR, 1953, No 9, 72-76 (Ukrainian)Pidoplichko, I. G.Conference on the Study of the History of Fauna and the Conditions for Existence of Animals

During 26-28 May 1953 the Institute of Zoology, Academy of Sciences of Ukrainian SSR, held a conference on the study of the history of fauna and the changes in conditions of environment during the course of the neogene and anthropogene. Sixteen lectures were heard on the history of development of landscape, flora, and fauna during the course of the second half of the quaternary period. The conference emphasized the principal problems in the further development of faunal history in Russia. (RZhGeol, No 3, 1954)

Geology of Quaternary Deposits (2636)Nauchnaya sessiya 1952-1953 gg (LGU): Tezisy dokl. po seksii geogr. nauk, 20-23Pokrovskaya, I. M. and Malyasova, Ye. S.History of the Development of Flora in the Last Interglacial Age in the Territory of Leningrad Oblast

Report in the section of geographical sciences for the 1952-1953 scientific session of Leningrad State University. (RZhGeol, No 3, 1954)

Geology of Quaternary Deposits (2637)Tr. Komissii po izucheniyu chetvertich. perioda, 1953, 10, No 1, 5-121Gromova, VeraOsteological Differences in Species of Capra (Goats) and Ovis (Sheep): Guide for the Determination of Fossil Remains

[No abstract.] (RZhGeol, No 3, 1954)

Geology of Quaternary Deposits; Archaeology (3780)Soobshch. AN Gruz. SSR, Vol 14, No 9, 1953, pp 561-567Kiladze,The Multilayered Archaeological Monument "Sagvardzhile"

Describes the archaeological monument "Sagvardzhile," which is located between the rivers Dzevrula and Shavi-tskhali, and the layers found during excavation, which are as follows: 1. Five layers of the old stone age (Paleolithic), 2. a layer of the new stone age (Neolithic), 3. a layer from the beginning of the metal age (Eneolithic), and 4. a layer with relics of later periods. (RZhGeol, No 4, 1954)

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Hydrogeology; Chemism of Underground Waters (4144)  
Izv. otd. vest. n. AN Tadzh. SSR, No 3, 1954, pp 155-157  
 Poletayev, I. K.  
 Sources of Ground Waters of the Vakhshskaya Valley

Earlier investigators had maintained that 85% of the ground water in the Vakhshskaya valley was the result of irrigation water, and 15% was caused by natural precipitation. By studying saline and mineral qualities of this water the author was able to prove that actually the basic source of the ground water in the valley is the ground water of nearby ridges and highlands, and that a secondary source is an underground current of filtration waters from Vakhsh. (RZhGeol, No 4, 1954)

Mineralogy (2751)  
Tr. Georn-geol. in-ta Ural'skogo fil. AN SSSR, 1953, No 20, 144-147  
 Pokrovskiy, P. V., and Tsimbalenko, M. N.  
 Nature of the Siliceous Powdery Incrustations on Chalcedony

The chalcedony found in the fissures in the zone of garnet skarns (Sudzhuk-Urals) has its surface covered with a very thin incrustation, milky white in color, which covers the entire surface of the specimen or only the end of the stalactites, but sometimes is covered with jutting dots. The genetic relation between the chalcedony and the incrustation is not clear. (RZhGeol, No 3, 1954)

Mineralogy (2752)  
Tr. Mineralogich Muzeya AN SSSR, 1953, No 5, 195-199  
 Lebedev, L. M.  
 Dune-Like Formations on Drusy Quartz

Dune-like formations of hornstone-like quartz on drusy quartz were observed by the author in a vertically incident vein lying in granite-porphry. The part of the vein close to the selvage (casing) was complicated with orthoclase, and the central portions with compact quartz. (RZhGeol, No 3, 1954)

Mineralogy (2753)  
Zap. Uzbekistanskogo Otd. Vses. Mineralog. ob-va, 1953, 4, 104-109  
 Babayev, K. L.  
 Genesis of the Oreless Quartz Veins in one of the Rayons of West Uzbekistan

The oreless quartz veins lying in quartzites of an ancient metamorphic stratum in one of the rayons of West Uzbekistan represent supposedly "metamorphogenetic" formations that occurred as a result of remelting of the quartzites by the acid magma which broke through this stratum repeatedly; the remelted mass under the influence of the pressure by the magmatic basin was intruded into the wall rocks. In this way the author explains the formation of the small fields of oreless quartz veins in other regions of Central Asia, e.g., in Kurata and Karatuba Mountains. (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

## Mineralogy (2759)

Tr. Mineralogich. Muzeya AN SSSR, 1953, No 3, 56-89  
Barsanov, G. P., and Sheveleva, V. A.

Data on the Study of Luminescence of Minerals. II. Carbonates

The authors present the results of a study of the luminescence of carbonates in ultraviolet rays with the application of light filters (wave length about 3600, 3200-2800 and 2537 Angstroms) and in the cathode tube of the G. F. Komovskiy system. They give tables of the luminescing carbonates. A whole series of carbonates (aragonite, veterite, hydromagnesite, libigite, nicholsonite, smithsonite, soda, phosgenite, cerussite, etc.) is found to possess good and stable luminescence permitting their easy diagnosis. (RZhGeol, No 3, 1954)

## Mineralogy (2767)

Tr. Mineralogich. Muzeya AN SSSR, 1953, 5, 164-165  
Ginzburg, A. I., and Matias, V. V.

Eosphorite From the Pegmatites of East Transbaikal

The authors describe eosphorite, first encountered in the territory of the USSR in a pegmatite vein in East Transbaikal, within hollows in albite, quartz and muscovite in the form of solid masses and crystals with forms (11) and (121). Eosphorite changes easily under hypergenetic conditions. (RZhGeol, No 3, 1954)

## Mineralogy (2776)

Tr. Gorno-Geol. in-ta Ural'skogo Fil. AN SSSR, 1953, No 20, 136-137  
Butyrin, N. V.

Finding of Axinite in the Region of Kachkanar Mountain in Central Urals

Axinite forms bush-like crystals on the walls of fissures in amphybolite. The wedge-shaped brownish-gray crystals of axinite possess the dimensions 5-8 mm, Ng 1.688, Nm 1.684, Np 1.676. The results of a spectroscopic analysis of axinite are presented. (RZhGeol, No 3, 1954)

## Mineralogy (2787)

Izv. An Uz. SSR, 1953, No 3, 36-42

Babayev, A. G.

Glaucinite in the Cretaceous Deposits of Central Asia

The author expounds the results of a study of the lithology of Cretaceous deposits of Central Asia. Study of the glauconite content of these deposits permits the author to solve the problem of the conditions governing their formation. Glaucinite as an important indicator of paleochemical conditions of sedimentation is considered by the author to be a formation of marine and oceanic reservoirs. In opposition to L. I. Gorbunova the author thinks that decreasing coloration of glauconite reflects diagenesis and hence depth. (RZhGeol, No 3, 1954)

C-O-N-F-I-D-E-N-T-I-A-L

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C-O-N-F-I-D-E-N-T-I-A-L

Mineralogy (2789)Sb. Stud. Nauch. Rabot Rostovsk.-na-Donu Un-ta, 1953, No 2, 52-56

Rotko, M. A.

Colloidal Dispersive Minerals of Meotie Clays in the Rostov Region and Their Adsorptive Properties

A student scientific work conducted at Rostov University. The student gives the chemical composition of the fine fraction of meotie clays from the neighborhood of Rostov, in percent:  $\text{SiO}_2$ , 49.53;  $\text{Al}_2\text{O}_3$ , 26.04;  $\text{Fe}_2\text{O}_3$ , 8.17;  $\text{CaO}$ , 0.52;  $\text{K}_2\text{O}-\text{Na}_2\text{O}$ , 0.04; hygroscopic water, 7.47; water of crystallization, 9.23. The critical point of heating is characteristic of ferribaidellite. (RZhGeol, No 3, 1954)

Mineralogy (2792)Tr. In-ta Geol. Nauk AN SSSR, No 147, Petrografich. Seriya, 1953, No 43, 185-222

Belyankina, Ye. D.

Chemical Mineralogical Investigation of Potassium-Sodium Feldspars of the Caucasus

In all the specimens of potassium-sodium feldspars analyzed the author established the following contents:  $\text{SrO}$ , 0.09-0.13%, and  $\text{MgO}$ , 0.10-0.72%. The assayed purity of the material forces one to assume the presence of magnesium in the lattice of the feldspar. (RZhGeol, No 3, 1954)

Mineralogy (2794)Tr. Gorno-Geol. in-ta Ural'skogo Fil. AN SSSR, 1953, No 20, 25-34

Some Main Minerals of Skarns from the Gumeshevskiy Deposits in the Urals

The skarns of the Gumeshevskiy deposits in the Urals (located in the region of the contact of granite with marble) are subdivided as follows: 1. limestone-iron with  $\text{CaO}$  (granitic skarns); 2. limestone-clay earth with  $\text{CaO}$ ; 3. cyosite-epidote skarn; 4. limestone-magnesia with  $\text{CaO}$ ; 5. carbonate; 6. intermediate. (RZhGeol, No 3, 1954)

Mineralogy; Silicates (3917)Dokl. AN Uzb. SSR, No 1, 1954, pp 25-28 (Uzbek resume)

Babayev, A. G.

Tourmaline in the Chalky Deposits of the Lowlands of Western Uzbekistan

The author divides the chalky deposits of Western Uzbekistan into nine basic types of tourmaline, according to form, size, color, character and intensity of pleochroism. Each type is described briefly. (RZhGeol, No 4, 1954)

Petrography of Magmatic and Metamorphic Rocks (2712)Tr. In-ta Geologii Kirgizskogo Fil. AN SSSR, 1953, No 4, 31-37

Krivolutskaya, V. M.

Microcline of Plagiogranites of Babakhan Massif

The Babakhan intrusive massif located on the northern slope of the Talas Mountain Range is complicated by plagiogranites of the following composition: plagioclase No 27, 30%; No 55, 70%; quartz 20, 30%; biotite 5, 8%; microcline 8, 10%. Two generations of microcline are observed. (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

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Petrography of Magmatic and Metamorphic Rocks (2721)  
Nauch. Zap. Kiyevskogo Un-ta, 1953, 12, No 4, 5-14  
 Latysh, V. T.

Tokovsk Granite Intrusive (Mineralogicopetrographic Characteristics)

The Tokovsk granite massif is located in the lower reaches of the Bazavluk River (in the region of the central Dnepr area). The most complete cross-sectional profile can be traced along the River Kamenka (right tributary of the Bazavluk River), where in the western direction is noticed a substitution of rose-colored granite by mean-granular granite of Zhitomirsk type. Analysis of the granites is tabulated. (RZhGeol, No 3, 1954)

Petrography of Magmatic and Metamorphic Rocks (2725)  
Tr. Irkutskogo Un-ta, 1953, 9, No 1-2, 65-67  
 Micaceous Diabase from the Siberian Platform

The author describes the fine-grain micaceous diabase from rubble along with accumulative terrace on the Markoka River (in the basin of the Vilyu River). Fine-grain micaceous diabase is of great interest since similar varieties can be expected also in other places of the Siberian platform in root outcroppings in the form of more large-grain varieties of diabases. (RZhGeol, No 3, 1954)

Petrography of Magmatic and Metamorphic Rocks; Regional Petrography (3851)  
Geologichnyi Zh., Vol 13, No 4, 1953, pp 79-82 (Ukrainian)  
 Piskorc'ka, O. K.

Petrography of Vulcanized Rocks of the Uzhgorod-Khustskiy Range

The author adds to data of earlier investigators of effusive rocks of the Uzhgorod-Khustskiy range. The following types are mentioned: hypersthenic andesites, andesite-dacites, and tufa. (RZhGeol, No 4, 1954)

Petrography of Magmatic and Metamorphic Rocks; Regional Petrography (3852)  
Geologichnyi Zh., Vol 13, No 4, 1953, pp 83-85 (Ukrainian)  
 Karshenbaum, O. P., and Kulishov, M. P.  
 The Talc-Carbonate Horizon of Krivorozh'ye

States that as a result of investigations which lasted several years the presence of only one talc-carbonate horizon was established in Krivorozh'ye. The authors give a description of the different kinds of shale which make up the horizon. (RZhGeol, No 4, 1954)

Sedimentary Formations and Lithology (2676)  
Tr. In-ta Geologii AN Uz. SSR, 1953, No 9, 126-128  
 Popov, V. I., and Gridnev, N. I.  
 Scheme of the Rhythmostratigraphy of the Cenozoic Molasse in the Southern Tadzhik Depression

[No abstract.] (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

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C-O-N-F-I-D-E-N-T-I-A-L

Stratigraphy and Paleontology (2578)  
Izv. AN Kazakh SSR, 124, Ser. Geol., 1953, No 17, 171-175 (Kazakh resume)  
 Radchenko, M. I.  
 Problem of the Age of the Coal-Bearing Strata in the Karaganda Basin

The authors clarify the coordination in time of individual species of calamites to the various geological formations of the Karaganda basin. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2588)  
Dokl. AN Az. SSR, 1954, 10, No 1, 29-33 (Azerbaijdzhani resume)  
 Gasanov, T. A.  
 Lower Jurassic Fauna in the Upper Reaches of the River Asrikchay

In 1953 the author found for the first time fossils of ammonites and pelecypods belonging to the Lower Jurassic age of the sandstone-schist layer, in the upper reaches of the River Asrikchay in the Caucasus, on an eroded surface of crystalline Cambrian shale (or Pre-Cambrian). He describes and draws the ammonite *Grammoceras fallaciosum* Bayle, a species known from deposits in the Toarsk stage in the Kabarda ASSR, Georgian SSR and Western Europe. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2589)  
Tr. In-ta Geologii AN Uz. SSR, 1953, No 7, 117-153  
 Sikstel', T. A.  
 Data on the Stratigraphy of the Jurassic Coal-Bearing Deposits of Yagman in Turkmenian SSR

From the coal-bearing Jurassic deposits of Yagman are described and represented more than 20 species of fossil plants, including one new species. A conclusive solution of the problem of the age of the Yagman flora must await additional investigations into the interrelationships among the strata containing the flora and fauna. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2590)  
Tr. In-ta Geologii AN Uz. SSR, 1953, No 7, 69-114  
 Sikstel', T. A.  
 Data on the Stratigraphy of the Jurassic Strata of the Carboniferous Deposits of Kok-Yangak

The coal-bearing clay-argillite layers of the Kok-Yangak are divided by batches of conglomerates into six strata (I, II, III, IIIa, IV, V). The complex tectonic structure of the deposits required the development of procedures for discriminating the various strata having similar lithological composition. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2603)  
Uch. Zap. Saratovskogo Gos. Un-ta, Vyp. Geol., 1953, 37, 21-25  
 Morozov, N. S., and Vasil'yeva, N. A.  
 Paleogene Deposits of the Basin of the Bogucharka and Tikhaya Rivers on the Don's Right Bank of the Central Current

The author shows that in the region of the right bank of the middle flow of the River Don lie transgressively paleogene deposits upon deposits of the Upper Cretaceous (up to the Senoman inclusively). The age of the deposits is determined according to their stratigraphic position and from their analogy with the quartz-glaucinite sands of the Oligocene of the Ukraine. (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L



C-O-N-F-I-D-E N-T-I-A-L

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Sedimentary Formations and Lithology (2678)  
Tr. Groznenskogo Neft. In-ta, 1953, No 11, 16-19  
 Zabarinskiy, P. P.

Procedure for the Construction of Zonal Maps of Isopachytes

The author considers that the solutions of such problems as the boundaries of basins, causes of variation of phases, formation of discontinuities, etc., must be based on the analysis of geotectonic regimes of the basin. He recommends application of the procedure where thicknesses are analyzed. (RZhGeol, No 3, 1954)

Sedimentary Formations and Lithology (2684)  
Dokl. An Az. SSR, 1953, 9, No 11, 653-657 (Azerbaijdzhani resume)  
 Gorin, V. A.

Mechanism for the Formation of Certain Kinds of Sloping Lamination in the Productive Layer of the Apsheron Peninsula

The sloping lamination of the Apsheron productive layer, ordinarily relating to a type of stratification of periodic or temporal currents, could have been formed without discontinuity in the accumulation of sediments. Observations of present-day deposits in the lower reaches of the rivers of Caucasus Minor showed that under similar delta or littoral-maritime conditions the water currents forming the oblique-stratified strata simultaneously erode the covering earlier than the deposited layer. (RZhGeol, No 3, 1954)

Sedimentary Formations and Lithology (2685)  
Tr. In-ta Geologii An Uz. SSR, 1953, No 9, 109-114  
 Baskakov, M. P.

Mineralogical Composition of Sedimentary Rocks and the Coefficients of Stability of Minerals

In comparing terrigenous deposits according to mineralogical correlates one must take into consideration not only the ratio of minerals but also the factor of abrasion of the granules during their process of transference. The experimentally obtained data on the rate of loss of volume of the mineral during attrition under identical conditions are expressed by certain coefficients: quartz 1, microcline 1.63, amphibol 1.54, etc. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2573)  
Nauchnaya Sessiya 1952-1953 gg (LGU): Tezosu Dokaldov po Sektsiy Geol. n., 1, 1953, 9-11  
 Bystrov, A. P.

Evolution of Agnathous Vertebrates of the Silurian and Devonian

A report heard in the section of geological sciences during the 1952-1953 scientific session of Leningrad State University. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology (2576)  
Geologichnyi Zh., 1953, 13, No 3, 39-50 (Ukrainian)  
 Novik, K. O.

Stages in the Development of the Carboniferous Flora in the South European USSR

[No abstract.] (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E N-T-I-A-L

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Stratigraphy and Paleontology (2618)Dokl. Uz. SSR, 1953, No 12, 18-21, (Uzbekistan resume)Gramm, M. N., Vasyutinskaya, A. B., Kvanina, L. I., Manzhirova, G. A.,Sveshnikov, P. M., Tolokonnikov, V. V., Fomin, V. M.  
Akhchagyl Deposits in the Lower Reaches of the Amu-Darya

In 1952 in the lower reaches of the Amu-Darya during columnar drilling in a number of wells the drillers uncovered sandstone-clay deposits of the Akhchagyl age with thicknesses up to several dozen meters. These deposits lie on an eroded surface of the Paleogene and are superimposed by ancient delta sedimentary deposits of the Anthropogene. The character of the ostracod fauna testifies to the strong fresh-water nature of Akhchagyl gulf. (RZhGeol, No 3, 1954)

Stratigraphy and Paleontology; Mesozoic (3737)Izv. AN Azerb. SSR, No 9, 1953, pp 55-60 (Azerbaijani resume)Khailov, A. G.Albian Deposits of the Territory Between the Rivers Terter and Khachinchay

Describes two regions where upper Albian deposits were found. They were identified by the presence of certain types of rocks and fossils. Geological conditions and the opinions of other scientists appear to confirm this identification. (RZhGeol, No 4, 1954)

Stratigraphy and Paleontology, Mesozoic (3739)Izv. AN Arm. SSR, Ser. Fiz.-Mat., Yest. I Tekhn. n., Vol. 6, No 4, 1953,pp 53-54Yegoyan, V. L.New Kinds of Turonian Gastropoda of the Basin of the River Ved'

The age of layers belonging to the lower Triassic was determined by finding ammonites (Maekoceratidae) and lamellibranchia (*Pseudamonotis clarai* Baur.). All the deposits of the Ved' River basin are described. (RZhGeol, No 4, 1954)

Stratigraphy and Paleontology, Mesozoic (3743)Dokl. AN Arm. SSR, Vol 17, No 1, 1953, pp 19-26 (Armenian resume)Atabekyan, A. A.The Senoman in the Region of the Idzhevan Settlement in the Armenian SSR

Describes a wide anticlinal in northern Armenia joined by chalky deposits. Analyzes the gastropods and Rudistes which the author found while on an expedition, and provisionally assigns them to a geological age. (RZhGeol, No 4, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

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Stratigraphy and Paleontology, Mesozoic (3747)  
 Dokl. AN Azerb. SSR, Vol 10, No 2, 1954, pp 95-99 (Azerbaijdzhani resume)  
 Aliyev, M. M.  
 New Data on Inoceramus Azerbaidjanensis

It was formerly thought that Inoceramus azerbaidjanensis belonged to the Turonian. New investigations, however, indicate that these forms are found in Campanian deposits together with Inoceramus balticus Bohm, Micraster schroederi Stoll., Parapachydicus laevyi Gross., and others. The author divides the new Azerbaijdzhani forms into two types and describes them. (RZhGeol, No 4, 1954)

Tectonics (2654)  
 Tr. Mosk. Fil. Vses. Neft. Geol.-Razved. In-ta, Stratigrafiya i Tektonika Russkoy Platformy, Voprosy Geokhimii i Regional'noy Geologii, 1953, No 3, 65-64  
 Sazonov, N. T.  
 Tectonic Structure of Eastern Part of Ryazanskaya Oblast and Penzenskaya Oblast and Mordovskaya [Mordvin'an] ASSR

The territory of the Oka-Volga water divided is subdivided into positive and negative elements: I. Structures of the first order (Voronezh and Tokmovsk crystalline anticlines). II. Structures of the second order (Oka-Tsminsk, Kerensk-Chembarak, Zubovo-Polyansk, Sursk-Moksha and Alatyrr terraces and Bua-Karsun and Bola zone of upheavals). (RZhGeol, No 3, 1954)

Useful Minerals, Fuels (2959)  
 Tr. Gorno-Geol. In-ta Zapadno-Sibirskogo Fil. AN SSSR, 13, 29-39, 1953  
 Travin, A. B.  
 Nature and Conditions of the Accumulation of Certain Coals in the Askiz Region of Minbass (Minusa Basin)

The author shows that it is necessary to work out the industrial-genetic classification, standards, methods of enrichment and technology of coking for the coals of Minusa Basin. In the 6th, 11th and 18th coal strata of the Askiz series the following principal petrographic types have been distinguished: bright coal (indistinctly banded and thinly banded), semilusterless striated and massive coal, lusterless massive mineralized coal, etc. (RZhGeol, No 3, 1954)

Useful Minerals, Fuels (2973)  
 Tr. Tomskogo Un-ta, 124, 253-260, 1953  
 Pel'dyakov, I. S.  
 Petrographic Analysis of Products Resulting from the Enrichment of Coals

A microscopic study of the products of coal enrichment of the 6th and 17th strata of the Tom-usa coals was preceded by selection of layer testings, quartation, crushing, screening into classes (0-1, 1-3, 3-6 mm) and division into fractions in heavy liquids (zinc chloride solution) with specific gravity 1.3, 1.4, 1.5, 1.6 and 1.7. (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

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## Useful Minerals, Fuels (2975)

Dokl. AN Zs. SSR, 10, No 1, 23-27, 1954 (Azerbaydzhani resume)  
Kesamanly, G. D.

Pitch from Combustible Shales of Azerbaydzhani

Azerbaydzhani shales with organic mass of sapropelic origin give on the average about 46% pitch reminiscent of raw petroleum, but less homogeneous than petroleum. The pitch contains carbon 80-81%, hydrogen 9.6-10%, and sulfur 1.8-2%. Fractional distillation of the pitch at various temperatures gives the possibility of obtaining definite quantities of benzene, kerosene and diesel fractions. (RZhGeol, No 3, 1954)

## Useful Minerals, Fuels (2986)

Dokl. AN Az. SSR, 9, No 12, 707-711, 1953 (Azerbaydzhani resume)  
Gaziyev, G. N.

Establishment of the Influence of the Dynamic Character of Physical Constants Belonging to the Liquid in Strata Upon the Results of Exploitation of the Strata

In the process of developing a petroleum bed the physical constants of petroleum (i. e., viscosity, volumetric coefficient, gas factor, etc.) vary in consequence of the drop in layer pressure. This variation affects considerably the results of determining the coefficient of utilization of oil reserves and must be taken into account in succeeding computations. (RZhGeol, No 3, 1954)

## Useful Minerals, General Questions (3992)

Vestn. AN Kazakh. SSR, No 3, 1954, pp. 60-65  
Zhilinskiy, G. B.

Concentration Conditions of Heavy Minerals in the Alluvium and the Effectiveness of Search Operations by the Schlich Method  
(No abstract given.) (RZhGeol, No 4, 1954)

## Useful Minerals, Metals (2571)

Izv. AN Kazakh SSR, 1953, No 124, Ser. Geol, 17, 9-20  
Setpayev, K. I.

Metallogene Epochs, Formations and Zones

The author treats the metallogenesis of Central Kazakhstan and methods for the compilation of metallogene maps. As a basis he employs a structural-geological map on which are distinguished six complexes of different ages; Pre-Cambrian, early Caledonian, late Caledonian, early Varissk, later Varissk, and Kimmeridge-Alpine. The general laws governing the directional development of ore genesis in Central Kazakhstan are noted. (RZhGeol, No 3, 1954)

## Useful Minerals, Metals (2883)

Zap. Uzbekistanskogo Utd. Vses. Mineralog. Ob-va, 1953, No 3, 109-115

Khamrabayev, I. Kh.

Ancient Mining Works and Slag Tailings in Kara-Tyuba Mountains

In the eastern part of the Kara-Tyuba Mountains, not far from the Chinese highway, the author discovered slags and five ancient mining works in the limestones of the upper Silurian. The works are small half-filled open-pit mines, assumed to belong to the 10-12th centuries. (RZhGeol, No 3, 1954)

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## Useful Minerals, Nonmetals (2953)

Tr. Vses. N.-i. In-ta Galurgii, No 28, 94-103, 1953

Khod'kov, A. Ye.

Prospects for a Brine Industry in Slavjensk.

[No abstract given.] (RZhGeol, No 3, 1954)

## Useful Minerals, Non-Metallic Raw Materials (4109)

Vest. AN Kazakh. SSR, No 2, 1954, pp 58-60

Kiselev, N. M.

Mineral Pigment on the Shore of the Atasu River

Describes the red clay which is found along the right shores of the river Atasu, at the southwest foot of the Zhaksy-Baygul Mountains, Abana-Arkinskiy region, Karagardinskaya Oblast. The author analyzes this material as the result of erosion processes which have been going on since mesozoic times. (RZhGeol, No 4, 1954)

## Vulcanology (2704)

Dokl. AN Az. SSR, 1954, 10, No 2, 107-111 (Azerbaijdzhani resume)

Tamrazyan, G. P.

Salinity of the Waters from the Mud Volcanoes of Azerbaijdzhani

The waters from the mud volcanoes of Azerbaijdzhani are characterized by weak salinity, which fluctuates from 0.2 to 6.0. These fluctuations are characterized by definite regularities that depend upon peculiarities of stratigraphic complex and upon tectonic manifestations. The salinity increases from north to south. Increased salinity of waters of mud-volcanic islands of Baku archipelago indicates large-scale disjunctive dislocations of large amplitude. (RZhGeol, No 3, 1954)

Geography

## Biogeography (3319)

Izv. AN BSSR, No 5, 193-195, 1953

Ginzburg, G. A.

Profile of Displacement of Firs and Oaks in Belorussian SSR

The method of profiles was employed to clarify geographical differences in the state of forests according to species and in connection with the taxation formula of leskhoz plantings, etc. The profile was carried out along 28° East Longitude, dividing Belorussian SSR into equal parts and cutting the 12 leskhozes. The fir parts (in percent of forest cover) from north to south falls from 40.0 to 0.58%, and the oak increases from 0.1 to 9.24-10.23%. (RZhGeol, No 3, 1954)

## Cartography (3102)

Sb. Statey po Kartografii, No 4, 35-44, 1953

Taich, V. D.

Application of Perspective Projections to Small-Scale Maps

The author presents a graphicoanalytical method for constructing perspective projections, which permits one in the process of creating a map to control the obtaining of the desired form of the grid. He shows the interrelationship of a number of factors determining the perspective. (RZhGeol, No 3, 1954)

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C-O-N-F-I-D-E-N-T-I-A-L

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## Cartography (3111)

Sb. Statey po Kartografii, 4, 29-34, 1953

Davydov, G. P.

Distinguishing on Maps the Sources of Rivers by Indicating Their Names

Investigation of four plates of a map of scale 1:100,000 and one plate of another map of scale 1:100,000 showed that they require the placing of additional legends of river names and names of sources; in the average up to 70% for maps of scale 1:100,000 and 33% for maps of scale 1:300,000. The author recommends on all maps of scale 1:200,000 and smaller the signature of names of all rivers whose lengths on the map are three cm or longer. (RZhGeol, No 3, 1954)

## Countries (USSR) (3354)

Vopr. Geografii Sibiri, No 3, 249-256, 1953

Laptev, I. P.

Problems of Combining the Waters of the Yenisey, Ob', Aral, and Caspian and the Possible Influence Upon the Fauna of Land Vertebrates in the Taiga Zone of Western Siberia

On the analogy of changes undergone in the land vertebrates in the regions of the Ryba watershed and Moscow Sea, the author considers the possible changes of such fauna in Western Siberia in connection with the realization of the planned hydroelectric and other constructions. He notes the problems arising in connection with such a scientific research operation. (RZhGeol, No 3, 1954)

## Countries (USSR) (3359)

Zap. Amurskogo Obl. Muzeya Krayevedeniya i Ob-va Krayevedeniya, 2, 57-72, 1953

Malyshev, V. P.

Development of a Forest Industry in Amurskaya Oblast'

[No abstract given.] (RZhGeol, No 3, 1953)

## Countries (USSR) (3370)

Izv. AN Uz. SSR, No 3, 123-125, 1953

Betger, Ye. K.

New Data on the Collection "Turkestanskiy Sbornik"

"Turkestanskiy Sbornik" represents a symposium of monographs and articles relating to Central Asia in general and to Turkestanskiy Kray in particular. It is a unique collection of printed material clippings from gazettes, journals, and books on prerevolutionary Turkestan; it totals 594 volumes, of which 416 volumes gathered V. I. Mezhev cover the years 1867-1867 and the remaining volumes were prepared in 1907-1916 and 1939. However, this collection cannot pretend to be complete. (RZhGeol, No 3, 1954)

## Countries (USSR) (3371)

Vest. AN Kazakh SSR, No 8, 48-54, 1953

Samokhvalov, N. F.

Natural History Classification of Kazakhstan into Regions

On the basis of a proposed regionalization the author sets up a complex of natural criteria for defining the agricultural value of various parts of the country. The main factor in the apportionment of territorial units is taken to be climate. The others factors (soil, geobotanic) are used to

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make more precise the boundaries of the regions. He operates with the following two main taxonomic units: natural history zone and natural history region (understood to be a part of a zone more or less homogeneous in micropeculiarities of relief, climate, soil, plants). (RZhGeol, No 3, 1954)

Countries (USSR) (3372)  
Izv. AN Turkm. SSR, No 5, 9-13, 1953  
 Ovezov, D  
 History of the Settlement of Murch

On the basis of works carried out by the South Turkmenistan Archeological Complex Expedition of the Academy of Sciences of Turkmen SSR, the author clears up the ancient local starting point of the race of Murchal. (RZhGeol, No 3, 1954)

Countries, Kazakhstan (4561)  
Sel'skoye Kh-vo Kazakhstana, No 1, 1953, pp 54-59  
 Mukhamedzhanov, K. and Zozulya, M.  
 Water Economy Operations on Irrigation Systems

[No abstract given.] (RZhGeol, No 4, 1954)

Countries, Kazakhstan (4562)  
Sel'skoye Kh-vo Kazakhstana, No 1, 1953, pp 59-61  
 Sydykov, Zh.  
 Underground Waters of Mangyshlak and Their Use in Livestock Raising

[No abstract given.] (RZhGeol, No 4, 1954)

General History (3064)  
Tr. Mosk. In-ta Inzh. Geodezii, Aerofotos'yemki i Kartografii, No 16, 77-87, 1953  
 Bilich, Yu. S.  
 The Cartographic Activity of A. A. Tillo

A. A. Tillo (1839-1900) was an outstanding Russian cartographer and military geodesist, well known for his works in the creation of the hypsometric map of European Russia on a scale of 1:2,520 (1889); he was chairman of the department of mathematical geography in the Russian Geographical Society (1889-1897). (RZhGeol, No 3, 1954)

General History (3067)  
Tr. Sredneaz. Un-ta, Geogr. n., Book 4, No 38, 51-65, 1953  
 Gal'kov, Ch. V.  
 The Cartographic Activity of Yu. M. Shokal'skiy

Yu. M. Shokal'skiy (died in 1940) was a very great geographer-cartographer, honorary academician of the Academy of Sciences USSR, Hero of Socialist Labor, president of the Geographical Society of the Soviet Union, honorary member of almost all large geographical societies in the world. He created a number of the north plates of the hypsometric map of the European part of the USSR on a scale of 1:1,500,000 and also a number of maps of the north Arctic Ocean. (RZhGeol, No 3, 1954)

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General, History of the Science (4204)  
Vest. AN Kazakh. SSR, No 2, 1954, pp 81-86  
 Dakhshleyger, G. F.

The Outstanding Investigator of the Aral Sea, Aleksey Ivanovich Butakov

[No abstract given.] (RZhGeol, No 4, 1954)

General, Personalia (3088)  
Izv. AN Turkm. SSR, No 5, 91-93, 1953  
 Dement'yev, G. P., and Rustamov, A. K.  
 In Memory of Mikhail Konstantinovich Laptev

The article is devoted to the memory of M. K. Laptev (1885-1948), the Soviet zoologist and zoogeographer and former chief of the zoological sector of the Turkmenian affiliate of the Academy of Sciences USSR. (RZhGeol, No 3, 1954)

General, Personalia (3089)  
Uch. Zap. Kazansk. Un-ta, 113, Book 2, 99-103, 1953  
 Kolobov, N. V.  
 In Memory of Professor P. T. Smolyakov

The article is devoted to the memory of Professor Petr Trofimovich Smolyakov, head of the chair of geophysics of the Kazan State University imeni V. I. Ul'yanov-Lenin, doctor of physicomathematical sciences, who died 5 May 1952. The principle works of P. T. Smolyakov concern problems of general and synoptic meteorology and climatology. (RZhGeol, No 3, 1954)

General, Sessions (3094)  
Izv. AN Turkm. SSR, No 6, 72, 1953  
 Babayev, A. G.  
 In the Turkmenian Geographical Society

Information on the general session devoted to the 90th anniversary of Academician V. A. Obruchev. (RZhGeol, No 3, 1954)

Hydrology of Land (3234)  
Izv. In-ta Gidrologii i Gidrotekhniki AN USSR, 10, (17), 133-140, 1953  
 Pikush, N. V.  
 The Runoff from Elementary Areas

The author briefly describes the runoff areas (watershed area) of the Boguslavl hydrological station and the results of observations on the runoff from these areas. The majority of the article is taken up with tables of data on rain runoff and on runoff due to melted snow. The surface runoff from areas with large soil moisture is observed when precipitation is higher than 5 mm; for the case of dry soil is not observed even when the precipitation is 16 mm. Maximum daily runoff from melting snow does not exceed 6.6 mm. (RZhGeol, No 3, 1954)

Hydrology of Land (3242)  
Tr. Gos. Gidrol. In-ta, No 40 (94), 3-13, 1953  
 Makkeveyev, V. M.

Certain Problems of Principle in the Laboratory Study of Rivers

In the modeling of river-bed processes an especially complicated task is to ensure the necessary similitude of dimensional analysis during reproduction of the natural conditions and phenomena. The similarity of the velocity

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structure of flow in the simplest case is preserved when one ensures the similarity of the relief of the free surface of flow. The author also considers the problem of utilizing aerodynamic models for the investigation of river-bed processes, especially in establishing the character of circulatory currents and in the study of local resistances. (RZhGeol, No 3, 1954)

Hydrology of Land (3247)

Dokl. AN Az. SSR, 9, No 8, 451-455, 1953 (Azerbaydzhani resume)  
Rustamov, S. G.

Hydrographic Net of Northeastern Part of Caucasus Minor

[No abstract given.] (RZhGeol, No 3, 1954)

Hydrology of Land (3248)

Tezisy Dokladov Nauchnoy Sessii AN Gruz. SSR, Tbilisi, 15-17, 1953

Vladimirov, L. A.

Investigation of the Runoff of the Rivers in Mountainous Tushetiya and in the Upper Alazan Basin

A report given at a scientific session of the Academy of Sciences of the Georgian SSR. (RZhGeol, No 3, 1954)

Hydrology of Land (3256)

Tr. Labor. Ozerovedeniya AN SSSR, 2, 68-92, 1953

Forsh-Menshutkina, T. B.

Lakes and Estuaries of Taman Peninsula

Ancient reservoirs like lagoons, estuaries, predelta lakes cut off from marine bays sometimes possessed conditions favorable for the formation in them of petroleum-gearing facies. The lakes and estuaries of Taman Peninsula according to the physical-geographical conditions of their present-day regime are similar to ancient reservoirs associated with the formation of petroleum. (RZhGeol, No 3, 1954)

Hydrology of Land (3258)

Tr. Vses. N.-I. In-ta Galurgii, No 28, 114-117, 1953

Vasil'yev, G. A.

Thermal Regime of the Bottom Brine in the Upper Salt Strata of Lake El'ton

Investigations of salt deposits and mineral waters. The author publishes the results of works carried out by the All-Union Scientific Research Institute of Halurgy in 1948-1950. The temperatures of the bottom brine for 1949 at various depths according to observations in 10 wells are presented in a table. The characteristic feature of brine temperatures of a lake is the small variation of the mean yearly temperature with depth and the strong smoothing out of the amplitude of mean monthly temperatures with increasing depth of the layer. (RZhGeol, No 3, 1954)

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## Hydrology of Land (3259)

Vses. In-ta Okhotn. Promysla, No 12, 156-174, 1953

Smirenskiy, A. A.

Collapse-Pocket Lakes (Thermal Karst Lakes) in the Basin of the Upper Lena River

The author briefly analyzes the formation and development of karst lakes in the subsidences of the Kachug region of Irkutskaya Oblast. He shows that these lakes are passing in their development through a number of stages from young separate lakes to one large one. The karst lakes do not last long because of the rapid passage of the thermal karst process. (RZhGeol, No 3, 1954)

## Hydrology of Land (3264)

Tr. Tsent. In-ta Prognozov, No 30, 57, 60-84, 1953

Korzun, V. I.

Problems of the Infiltration of Water into Soil and the Possibility of Taking it into Account in Order to Forecast Rain Floods

The author attempts to analyze the role of infiltration in the general process of water absorption by river basins and, in particular, to verify the assumption of Ye. G. Popov (ibid., No 24, 51, 1951) concerning the approximate calculation of the intensity of infiltration (i.e., the formula  $v = h \cdot \exp(-ht/d) \cdot v_k$  where  $v$  is the velocity of infiltration,  $h$  is the constant intensity of precipitation,  $t$  is the duration of fall,  $d$  is the moisture deficit in soil, and  $v_k$  is the steady-state value of  $v$ , soaking into soil). (RZhGeol, No 3, 1954)

## Geography, Hydrology of Land (3265)

Izv. AN Turkm. SSR, No 4, 22-27, 1953

Yakovlev, I. S.

The Interrelationship Between the Alluvial Regime of the Irrigation Source and the Irrigation Systems.

The author attempts to calculate the transporting capacity of channels and the degree of purification in the flow, as indicated in the settling tanks, corresponding to a given transporting capacity of a shielded channel, using the example of the Amurdar'ya irrigation system. He employs the formula of A. G. Khachatryan to determine the transporting capacity. (RZhGeol, No 3, 1954)

## Hydrology of Land (3269)

Izv. In-ta Gidrologii i Gidrotekhniki AN USSR, 10 (17), 25-31, 1953

Drozd, N. I.

Areas Without Runoff in the South of the Ukrainian SSR

The author notes that the surface runoff from the low-lying parts (various saucer-like bottomlands), which are some distance from the slopes of ravines or valleys, do not reach these latter places and are held in the lowlands without runoff. This fact must be taken into account in any plan for the construction of artificial ponds in the upper portions or sources of small valleys where there are no outlets for the underground waters to the open surface. (RZhGeol, No 3, 1954)

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## Hydrology of Land (3268)

Sb. Nauch. Rabot. In-ta Melioratsii, Vod. i Bolot. Kh-va AN USSR, 2, 73-92, 1953

Krasnik, M. G., and Livshits, I. M.

Problem of Constructing Curves of Fit (Assurance) for Phase-Homogeneous Water Levels

The author clarifies the problems of the connection between the parameters governing the curves of fit (assurance) for phase-homogeneous levels and the discharge of water, and gives some suggestions for the use of these relationships in the construction of such curves. (RZhGeol, No 3, 1954)

## Physical Geography, General Questions (4272)

Izv. AN Azerb. SSR, No 5, 1953, pp 51-65

Zavriyev, V. G.

Physicogeographical Dividing of the Azerbaydzhanskaya SSR into Districts

The author points out that the present system of dividing Azerbaydzhani into districts does not conform to physicogeographical requirements. He then describes what he thinks is the correct method, and gives reasons for his choices. (RZhGeol, No 4, 1954)

## Physical Geography, Geomorphology (4289)

Izv. AN Azerb. SSR, No 1, 1953, pp 21-42 (Azerbaydzhani resume)

Khain, V. Ye. and Grossgeym, V. A.

Sea and River Terraces and Ancient Surfaces of Leveling

The author divides the Caspian quaternary deposits of the southeast Caucasus into six stages which belong to the lower and upper antropogenetic eras. A description of the deposits and terraces follows. (RZhGeol, No 4, 1954)

## Physical Geography, Geomorphology (4290)

Dokl. AN Azerb. SSR, Vol 9, No 5, 1953, pp 287-290

Antonov, B. A.

Surfaces of Leveling of the Northeastern Slopes of Lesser Caucasus

Describes four ancient surfaces of leveling located between the rivers Dzegamchay and Terter. States that these surfaces were formed by abrasion, erosion and freezing. (RZhGeol, No 4, 1954)

## Physical Geography, Hydrology of Dry Land (4438)

Gidrokhim. Materialy, Vol 21, 1953, pp 54-63

Anisimova, N. P.

Hydrochemical Characteristics of the Lena River in the Region of the Tabag Settlement in the Yakut ASSR

States that as a result of hydrochemical observations at Tabag it was determined that the water of the Lena River at that point is characterized by average mineralization and the presence of constant hardness. It can be placed in the hydrocarbonate class. (RZhGeol, No 4, 1954)

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Physical Geography, Hydrology of Dry Land (4447)  
Gidrokhim. Materialy, Vol 21, 1953, pp 19-23  
 Cherkinskiy, S. N.; Zaslavskaya, Ye. M.; Mikhaylovskaya, L. A.;  
 Khovanskaya, M. G.  
 Fluorine Content in Sources of the Water Supply of the RSFSR

Gives figures on fluorine content for several of the water sources which are currently being trapped throughout the RSFSR. Most of the observations were made in the territory of the paleozoic crater situated around Moscow. (RZhGeol, No 4, 1954)

Physical Geography; Hydrology of Dry Land (4446)  
Gidrokhim. Materialy, Vol 21, 1953, pp 24-29  
 Krepkogorskiy, L. N. and Bogusevich, L. N.  
 Fluorine in the Natural Waters of Kazakhstan

States that several sources of mass water supply for various regions of the republic contain too much fluorine, in some cases exceeding by a considerable amount the maximum permissible concentration (1 mg/liter). It is hoped that investigations in this field will lead to the discovery of all the sources of a disease which attacks the enamel of the teeth, and which is known to be caused by excessive fluorine in the water. (RZhGeol, No 4, 1954)

Physical Geography, Biogeography (4473)  
Vest. AN Kazakh. SSR, No 11, 1953, pp 51-61  
 Suvorov, N. I.  
 The Teaching of Dokuchayev and Williams as a Theoretical Basis for Biogeographical Division into Regions

The author presents a scheme for biogeographical division into regions which he considers acceptable also for general physico-geographical division. He explains why certain systems presently in use need revision. (RZhGeol, No 4, 1954)

Physical Geography, Geomorphology (3137)  
Izv. Krymskogo Otd. Geogr. Ob-va Soyuzna SSR, No 2, 31-28, 1953  
 Slydskiy, A. F.  
 The Ancient Salgir River Valley

Assumptions concerning the sharp change in direction of flow of the Salgir River were first expressed in the 1930's by A. I. Dzents-Litovskiy (Dokl. AN SSR, 76, No 6, 1953). On the basis of a study of the gravel-pebble deposits in the steppe part of the Crimea, the author shows that the Quaternary time, the Salgir river flowed westward, toward the basin of the Black Sea, and changed its directions several times. The problem of the relationship between the gravel-pebble deposits and terraces of the mountainous part of the Crimea is still unclear. (RZhGeol, No 3, 1954)

Physical Geography Geomorphology (3150)  
Dokl. AN Az. SSR, 10, No 2; 113-116, 1954 (Azerbaiydzhani resume)  
 Aliyev, A. A.  
 A New Scheme of the Orography of the Lenkoran Natural Region

The Lenkoran physico-geographical region (Talysh) morphologically falls into two parts: a low-lying part and a mountainous part. The Lenkoran lowlands is a weakly inclined terraced plain. In the mountainous

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part, V. Ya. Lisovskiy and others (Zap. Kavkazskogo Otd. Russkogo Geogr. ob-va, 1896) distinguished five parallel mountain ranges joined by bridge-like spurs ("dams") and forming a system of checkered slabs. According to Sh. F. Mekhtiyev, (*ibid.*, 2, No 8, 1946) and the author, the Lenkoran mountains consist of three main ranges. (RZhGeol, No 3, 1954)

Physical Geography, Geomorphology (3162)  
Tr. Mosk. Torf. Inst., No 2, 3-51, 1953  
 Tyuremnov, S. N., and Vinogradov, A. Ye.  
 Geomorphological Classification of Peat Deposits

As shown by the authors, coordination of the various types of peat deposits with definite elements of the relief testifies to the important role of geomorphological factors figuring in their formation and development. The characteristics of 19 types of peat deposits are presented in tabular form. The authors note that bottomland deposits are particularly widespread in the region of the Dnepr and Don tongues of the Dnepr glaciation. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3169)  
Tr. Gl. Geofiz. Observatorii, No 41, 125-132, 1953  
 Kondrat'yev, K. Ya., and Matreshina, T. D.  
 The Influence of Long-Wavelength Radiation of Ozone Upon the Radiative Balance of the Terrestrial Surface and Atmosphere

The authors compute the flow of radiation in the atmosphere in the region of the spectrum 9.4-9.9 microns (in the neighborhood of the absorption band of ozone 9.6 microns). They show that the function of radiative passage in the mentioned region of absorption can with sufficient accuracy be described by an exponential function. In the limits of altitudes up to 45 km, the atmosphere divides into 3 layers, in each of which the distribution of ozone concentration with altitude is approximately described by a linear function. A number of tables are presented illustrating the influence of long-wavelength radiation of ozone upon the flow of radiation in the upper bounds of the stratosphere, at the level of the tropopause, and at the surface of the earth. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3170)  
Tr. Gl. Geofiz. Observatorii, No 41, 133-143, 1953  
 Fedoseyeva, A. I.  
 Albedo of the System Earth - Atmosphere and its Distribution Over the Terrestrial Globe

The author presents (in the form of tables and charts) the distribution of computed values of the albedo of the earth-atmosphere system over the surface of the terrestrial globe for January, February, July and August, and also the mean yearly values. The general values found for the albedo of the earth as a planet turned out to equal 41%. In the computations, she took into consideration the albedo of the underlying surface, clouds, reflection, etc. (RZhGeol, No 3, 1954)

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Physical Geography, Meteorology and Climate (3171)  
Tr. Gl. Geofiz. Observatorii, 39, 150-163, 1953  
 Gayevskiy, V. L.

Problem of the Role of Albedo in the Formation of the Radiative Region of the Surface

The author describes a procedure for measuring the albedo from aircraft. The differences with observation conducted on the ground amount to 1-2 percent. He gives a table of values for the albedo over a definite route in the region of Pakhta-Urals as found from 48 flights. He considers the variations in albedo under the influence of irrigation and presents a computation formula that permits one to evaluate the change in temperature of the surface for a change in the albedo. Suitable graphs are constructed for this interrelationship. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3191)  
Tr. Gl. Geofiz. Observatorii, No 39, 37-60, 1953

Ayzenshtat, B. A.; Kirillova, T. V.; Laykhtman, D. L.; Ogneva, T. A.; Timofeyev, M. P.; Tseytin, G. Kh.

Measurement of the Heat Balance of the Active Surface for the Case of Irrigation

The authors present data on the components of the heat and radiative balance of the active surface in a semidesert and in an irrigated field. The data was obtained by an expedition of the Main Geophysical Observatory in July 1952 in the sovkhos "Pakhta-Aral," a collective farm in Central Asia. It was found that heat exchange in soil practically does not change under the influence of irrigation. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3192)  
Tr. Gl. Geofiz. Observatorii, No 39, 61-90, 1953

Ayzenshtat, B. A.; Ogneva, T. A.; Borushko, I. S.

Influence of Irrigation Upon the Distribution of Meteorological Elements in the Layer Near the Ground

The authors give the comparative characteristics of the regime of meteorological elements in the layer of air up to 500 meters and in the soil down to 50 cm according to given aerological and ground observations in a semidesert and in an irrigated cotton field. It is found that the speed of wind is reduced 40-50 percent under the influence of irrigation and forest belts. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3193)  
Tr. Gl. Geofiz. Observatorii, No 39, 191-200, 1953

Ayzenshtat, B. A., and Zuyev, M. V.

Certain Peculiarities of the Meteorological Regime in Cotton Fields and in a Semidesert During Autumn

The authors present data of meteorological observations and data on the components of heat balance in the course of the days 21-22 September 1952 in the same areas where in July the complex Pakhta-Aral expedition conducted its operations. In contrast with July, the September temperature differences of the air were small and were of the order of 1° at an altitude of 1 meter. Autumn saw no other notable differences in the values of the heat balance of cotton fields. (RZhGeol, No 3, 1954)

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Physical Geography, Meteorology and Climate (3194)

Tr. Gl. Geofiz. Observatorii, No 39, 219-227, 1953

Laytkhtman, D. L., and Tseytin, G. Kh.

Variation in the Temperature of the Ground Layer of the Atmosphere  
During Irrigation

The effect of irrigation is studied as an effect resulting from variations in the heat content of moving air in consequence of variations in the conditions surrounding heat exchange in the underlying surface. A procedure is developed for computing the relationships of these variations. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3195)

Tr. Gl. Geofiz. Observatorii, No 39, 228-231, 1953

Masalova, S. P.

Variations in the Humidity of Air During Irrigation

The author determines the variation in the humidity of air  $g$  over an irrigated portion of ground for various heights  $z$  and various distances  $x$  from the windward border by solving the equation for stationary transformation involving wind speed  $u$  and coefficient of exchange  $k$  at height  $z$ . She compares the data obtained in the Paikhta-Aral expedition of 1952 with computations. She also considers the possible variation in absolute humidity and dew point at height 2 meters as a function of irrigation norm for a number of geographical places. (RZhGeol, No 3, 1954)

Physical Geography, Meteorology and Climate (3196)

Tr. Gl. Geofiz. Observatorii, No 39, 275-283, 1953

Ayzenshtat, B. A.

Comparing the Compensation Method and the Gradient Methods for Determining  
Turbulent Heat Flow, and the General Characteristics of the Heat Balance  
of a Semidesert

The author analyzes the data from observations on the components of the heat balance in a semidesert which were obtained during the operations of a complex expedition. He presents the results of comparing the various methods for determining the turbulent heat flow. The results are found to be in good agreement with the computed values. The daily course of turbulent heat exchange for a semidesert is characterized by high daytime values of this quantity, reaching around midday  $0.6 \text{ cal/cm}^2\text{-min}$ , which is about 80 percent of the radiation balance. (RZhGeol, No 3, 1954)

## IV. MATHEMATICS

Differential Equations; Partial Differential Equations (5582)

Dokl. Ak. Uzb. SSR, No 12, 1953, pp 307 (Uzbek resume)

Sokolov, G. T.

Periodic Solutions of One Class of Partial Differential Equations

The author investigates the problem of finding conditions for which the nonlinear differential equation of hyperbolic type

$$z_{tt} - a^2 z_{xx} = F(x, t) + m^2(z)$$

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admits of a solution  $Z(x,t)$  which is continuous together with its second order partial derivatives with respect to  $x$  and  $t$  in the region where  $x$  and  $t$  are between zero and one, and which satisfies the following conditions:  
 $Z(0,t) - Z(1,t) = 0$ ;  $Z(x,0) = Z(x,1)$ ;  $[Z_t]_{t=1} = [Z_t]_{t=0}$ . (RZhMat, No 11, 1954)

Differential Equations; Partial Differential Equations (5583)  
Dokl. AN Uzb. SSR, No 4, 1953, pp 3-7 (Uzbek resume)  
 Sokolov, G. T.

Solutions of NonLinear Equations of Hyperbolic Type

The author examines the following problem:

$$(p(x)Z_x)_x - Z_{tt} = F(x,t) + mf(Z),$$

$$Z(0,t) = Z(p_1,t) = 0; Z(x,0) = g(x);$$

$$Z_t(x,0) = G(x).$$

The solution is investigated in a region  $D$ , where  $x$  is between zero and  $p_1$ , and  $t$  is between zero and one, all boundaries inclusive. (RZhMat, No 11, 1954)

Geometry; Differential Geometry of Three-Dimensional Space (5756)  
Izv. AN Latv. SSR, No 3, 1953, pp 132-134 (Latvian resume)  
 Berezina, L. Ya.

Several Bilateral Stratified Pairs of Congruences

The author establishes the existence of five different types of stratified pairs of congruences. He then shows that the arbitrary conditions for the existence of each of these pairs is in the form of six functions of one argument. (RZhMat, No 11, 1954)

General Questions (5370)  
Izv. AN Uzb. SSR, No 1, 1954, pp 104-110  
 [No author given.]

Scientific Session Dedicated to the Tenth Anniversary of the Academy of Sciences of the Uzbek SSR

[No abstract given.] (RZhMat, No 11, 1954)

Numerical and Graphical Methods (5766)  
Sobeshch. AN Gruz. SSR, Vol 14, No 8, pp 455-458  
 Gagua, M. B.

Calculating the Values of Bessel Functions of the First Kind

For any values  $z$  and  $v$ , the Bessel function of the first kind is represented by the Schlaefli-Sonin integral  $J_v(z)$ . The author suggests a method for breaking up this integral into three parts, and indicates what values must be chosen for various quantities in order to simplify the calculations. The author does not attempt to compare his method with those already in use. (RZhMat, No 11, 1954)

C-U-N-F-I-D-E-N-T-I-A-L



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C-O-N-F-I-D-E-N-T-I-A-L

## Theory of Numbers (5433)

Soobshch. AN Gruz. SSR, Vol 14, No 2, 1953, pp 77-83

Val'fish, A. Z.

## On the Theory of Primes

Assuming the correctness of the generalized Riemann hypothesis for all L-functions, and taking the function  $F(N)$  equal to the number of representations of natural  $N$  in the form  $N = mn + p$ , where  $m$  and  $n$  are natural and  $p$  is prime, the author derives a relationship for  $F(N)$  which is similar to that obtained by A. A. Ren'i in an article published in DAN SSSR, Vol 50, No 5, 1947, pp 675-678. (RzhMat, No 11, 1954)

## Theory of Functions of a Real Variable: Approximation of Functions (5516)

Soobshch. AN Gruz. SSR, Vol 15, No 2, 1954, pp 65-68

Dzhvarsheysvili, A. G.

## Convergence of Trigonometric Series

By definition, the summable function  $f(x)$  is in class  $V_p$  if for some integral  $p$  greater than zero,  $D^p(a_n)$  and  $D^p(b_n)$  are less than  $M/n$ , where  $M$  is constant,  $n = 1, 2, \dots$ ;  $a_n$  and  $b_n$  are Fourier coefficients of  $f(x)$  and  $D^p(a_n)$  equals the sum from  $k = 0$  to  $p$  of  $(-1)^k \binom{p}{k} a_{n+p-k}$  and  $D^p(b_n)$

is expressed similarly. The author proves two theorems on the convergence of the Fourier series of the function  $f(x)$  on the interval  $(-\pi$  to  $+\pi)$ . (RzhMat, No 11, 1954)

## V. PHYSICS

## Acoustics, Ultrasound (13624)

Byull. Polskoy Akad. Nauk. Otd. 4, No 3, 1953, pp 125-128

Koltonskiy, V. and Maletskiy, I.

## Possibility and Extent of Applied Ultrasonic Methods to the Study of Ores

Velocity and absorption of ultrasound in various ores (anhydride, salt, limestone, coal, sand) were studied in laboratory conditions in the frequency range of 30-150 kc. It was found that absorption slightly rises in the frequency range of 30-80 kc and increases rapidly over 80 kc. Velocities were measured on cylindrical specimens by means of the standing wave. Longitudinal waves moved at a 4000 meters/sec velocity in salt. Authors consider this method useful for study of ore structure. (RzhFiz, No 11, 1954)

## Atomic and Molecular Physics, Phase Change (13000)

Izv. Sektora Fiz. Khim. Analiza IONKh AN SSSR, 23, 1953, pp 9-12

Reshetnikov, M. A.

## Classification of Nonsingular Curves of N. S. Kurnakov and the Equation of the Isotherm of Properties of Binary Systems

Previously (ibid., 19, 165 (1949)) the author obtained, proceeding from the probabilities of combinations of molecules of components of a binary single-phased system of the type AA, BB and AB = BA, the isotherm equation with three characteristics constants. These constants and the family of nonsingular curves responding to various values of these constants are analyzed. The properties of diluted solutions should be predicatable from the isotherm equation. (RzhFiz, No 11, 1954)

C-O-N-F-I-D-E-N-T-I-A-L

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Nuclear Physics, Reactions Produced by Neutrons (12827)  
Byull. Polskoy Akad. Nauk, Otd. III, No 3-4, 1953, pp 101-104  
 Vilgelm, Z., Brunsh, R., Dombrovskiy Ts.  
 New Nuclear Reactions Produced by Fast Neutrons in Tin

Reactions  $\text{Sn}^{118}(n,p)\text{In}^{118}$  and  $\text{Sn}^{116}(n,p)\text{In}^{116}$  from irradiation by fast neutrons were studied. According to the nuclear shell model, the cross sections of such reactions should be below average. Authors compared their results with those of  $\text{Fe}^{56}(n,p)\text{Mn}^{56}$  known from literature. The obtained cross sections were accurate within 20%. (RZhFiz, No 11, 1954)

Physics of the Atmosphere, Conferences (14024)  
Izv. Akad. Nauk Uzbekskoy SSR, No 6, 1953, pp 111-114  
 Kelbert, S. L.  
 Hydrometeorological Conference

A hydrometeorological conference organized by the Academy of Sciences of Uzbek SSR (the physico-mathematical division), was held in Tashkent (RZhFiz, No 11, 1954)

Solid State Physics, Heterogeneous Equilibrium (13108)  
Byull. Polskoy Akad. Nauk, Otd. II, No 3-4, 1953, pp 155-156  
 Smyalovskiy M., Shklyarskaya-Smyalovskaya, Z.  
 Study of Diffusion of Hydrogen in Iron from Observations of Elongation of the Specimen

A method facilitating the evaluation of the effect of various admixtures on penetration of hydrogen into iron electrode during electrolysis is presented. The method is based on the relation binding the elongation of the iron filament under a given load to the hydrogen abundance. (RZhFiz, No 11, 1954)

Solid State Physics, Phase Equilibrium (13154)  
Izv. Sektora Fiz.-Khim. Analiza IONKh AN SSSR, 24 1954, pp 59-123  
 Kripyakevich, P. I. and Cherkashin, Ye. Ye.  
 Systematics of Double Intermetallic Phases

Classification of all known double intermetallic phases is outlined, based on the structure type and chemical bond. The tabulation contains around 1800 double intermetallic phases as well as their distribution in binary alloys. (RZhFiz, No 11, 1954)

Solid State Physics, Processes of Crystallization (131181)  
Izv. Sektora Fiz.-Khim. Analiza IONKh AN SSSR, 22, 1953, pp 71-82  
 Fridlyander, I. N., Fillipova, Z. G., Model, M. S.  
 Dependence of Temperature at Crystallization Threshold on Degree of Overcooling of the Fusion

The temperature along the moving crystallization threshold in the overcooled liquid is studied. Basic measurements are processed in benzophenone. Experimental results show a sharp temperature jump of the thermocouple junction at the instant the moving crystallization threshold passes through. The phenomenon is ascribed to the release of latent heat. (RZhFiz, No 11, 1954)

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

Solid State Physics, Structural Crystallography (13141)  
Izv. AN Turkmenskoy SSR, 5, 1953, pp 70-76  
 Bljumen, L. M.

The Structure of Certain Titanates in Solid Phase (First Report)

The phase composition and structure of systems  $\text{BeO-TiO}_2$  and  $\text{ZnO-TiO}_2$  was studied. X-ray and microscopic investigations proved that at sintering of  $\text{BeO-TiO}_2$  in solid state only one combination forms, probably,  $\text{BeO-TiO}_2$  having a rutile lattice, while from crystallization of a fusion the combination  $2 \text{BeO-TiO}_2$  may also occur. (RZhFiz, No 11, 1954)

Solid State Physics, Structural Crystallography (13110)  
Izv. AN Latvyskoy SSR, 5, 1953, pp 93-96

Ievin'sh. A. F., and Ozol, Ya. K.

Thermostat for Precise Determination of Parameters of an Elementary Crystal Nucleus

The construction of an X-ray thermostat for precise determination of parameters of a crystal lattice is described. The thermostat secures constant temperature with deviations not exceeding  $0.01-0.05^\circ$ . (RZhFiz, No 11, 1954)

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